

NIH in the Post Doubling Era: Realities and Strategies for the Future

Elias A. Zerhouni, M.D.
Director
National Institutes of Health



Competition for funds from the NIH and other sponsors, intensifying year by year, now stands at an unprecedented level, and shows no sign of abating. Never before have so many established investigators faced so much uncertainty about their longevity as active scientists. Never before have so many novices faced so many disincentives to entering or continuing a research career.

Dr. William F. Raub, NIH Associate Director for Research and Training, strategy paper, 1982



The Apparent Paradox:

The budget of NIH has doubled

- but -

Success rates have dropped by a third

What is happening?

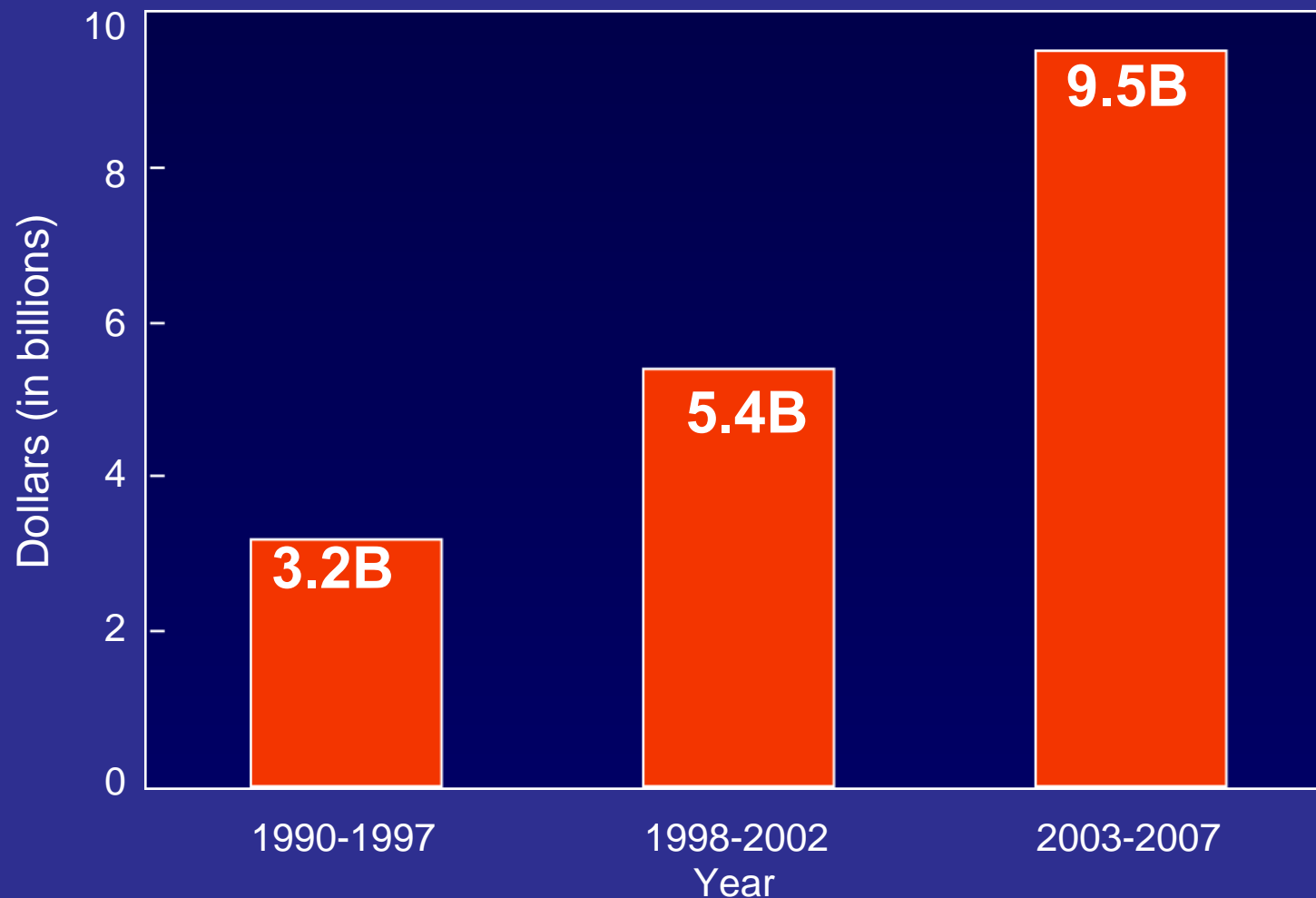


What Is Really Happening?

- Facilities building and faculty growth throughout U.S. research institutions
- 100% growth in applications and 75% growth in applicants per year by 2007
- Budget appropriations below inflation since 2003
- Budget cycling phenomenon



Investment in Research Facilities at U.S. Medical Schools



AAMC – Survey of Research Facility Investments (99 of 125 AAMC Member Schools)

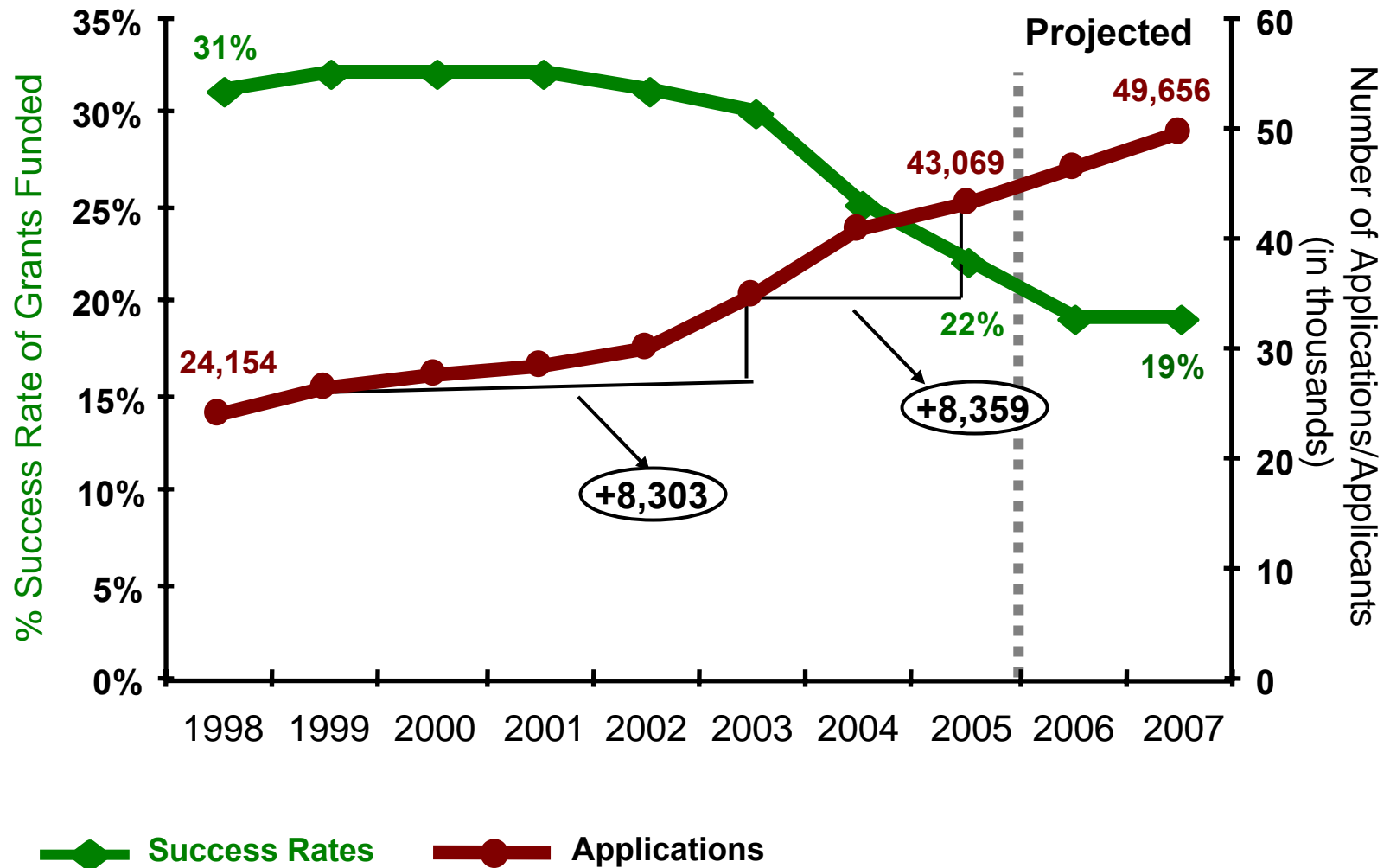
* Data Based on AAMC Faculty Roster

Elmehrikhouni, M.D.

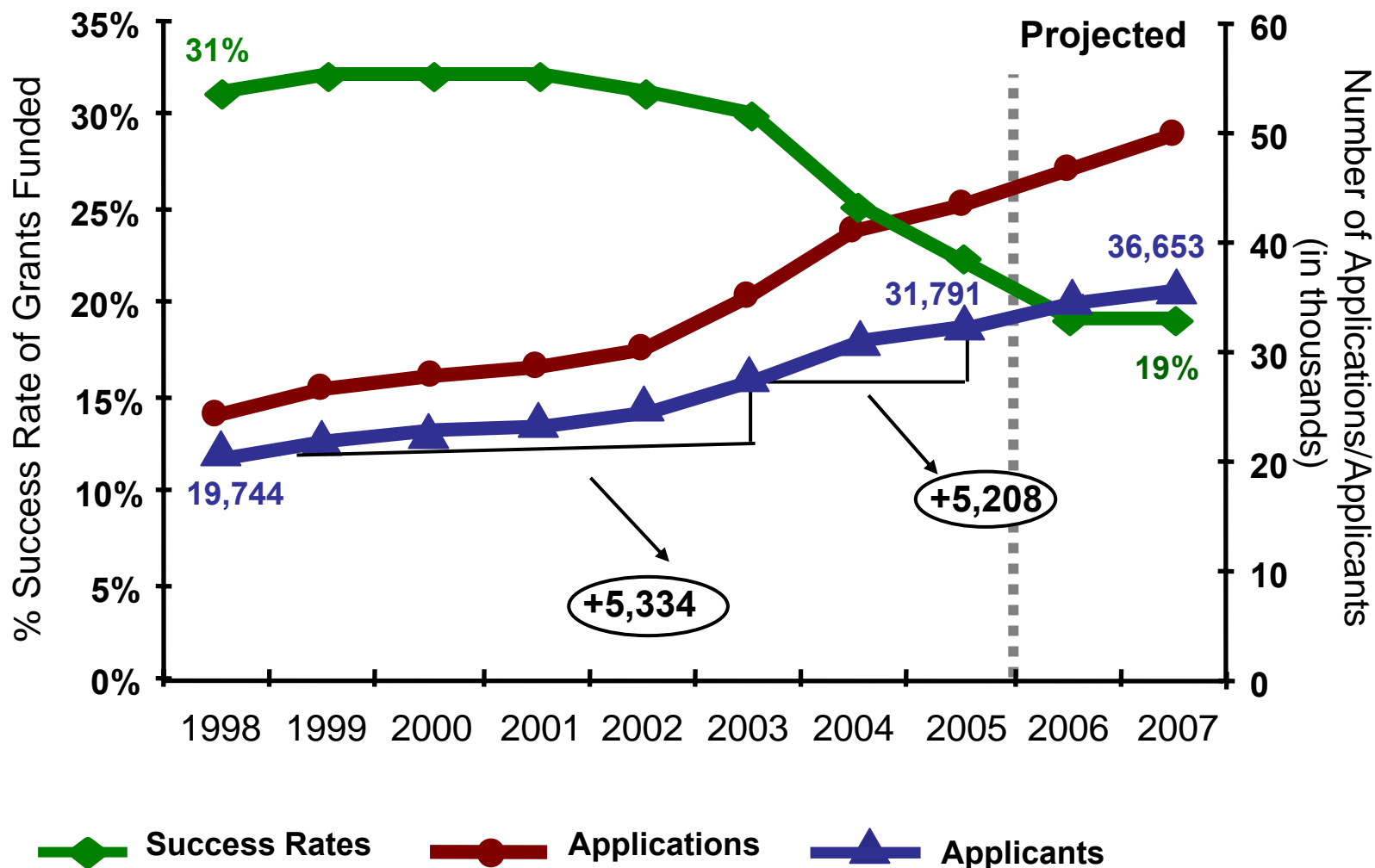
September 2006



National Research Capacity and Demand for Grants Surges at End of Doubling Period, Success Rates Fall

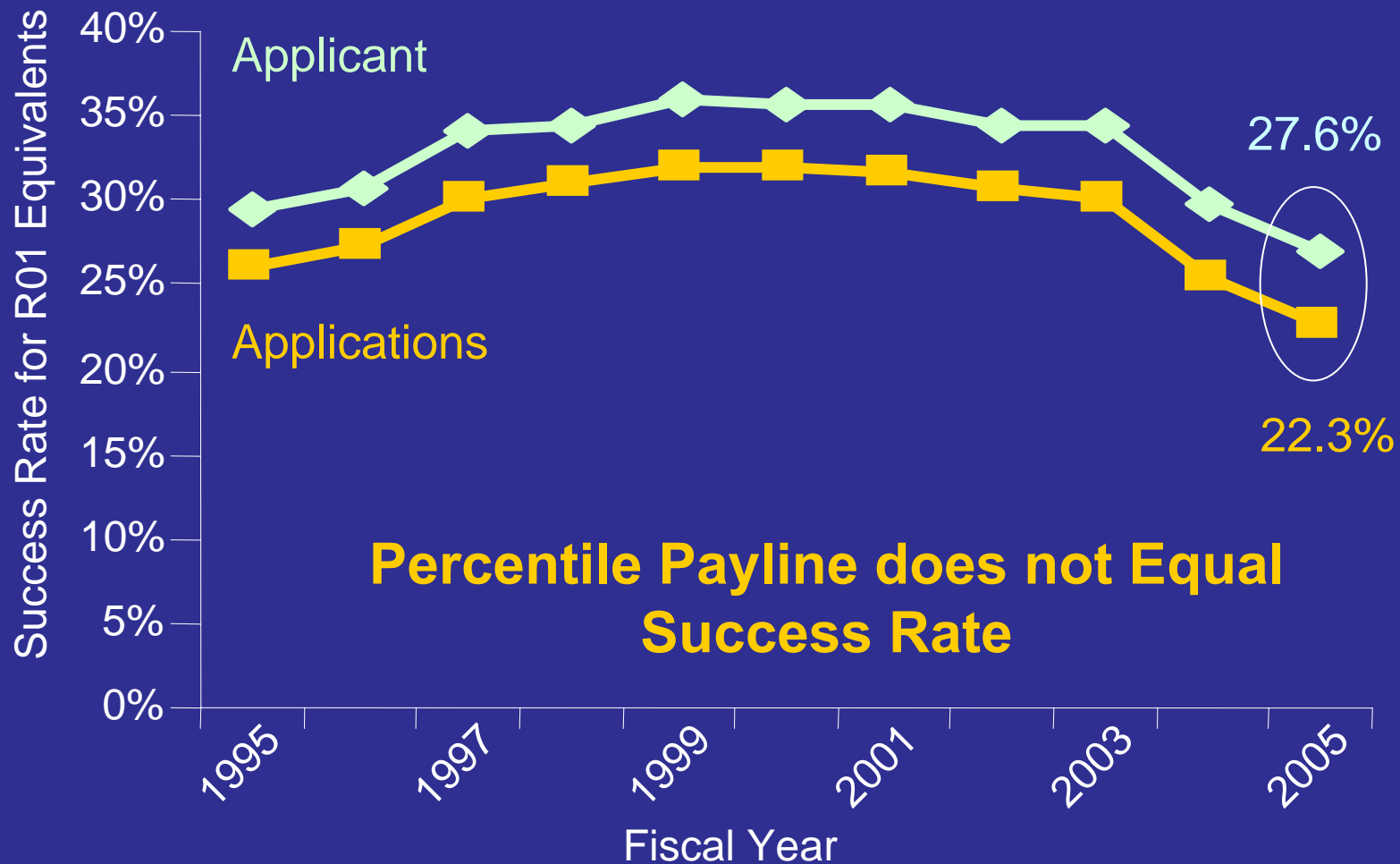


National Research Capacity and Demand for Grants Surges at End of Doubling Period, Success Rates Fall



What are My Chances of Being Funded?

*Success Rate per Application Understates
Funding Rate per Applicant*

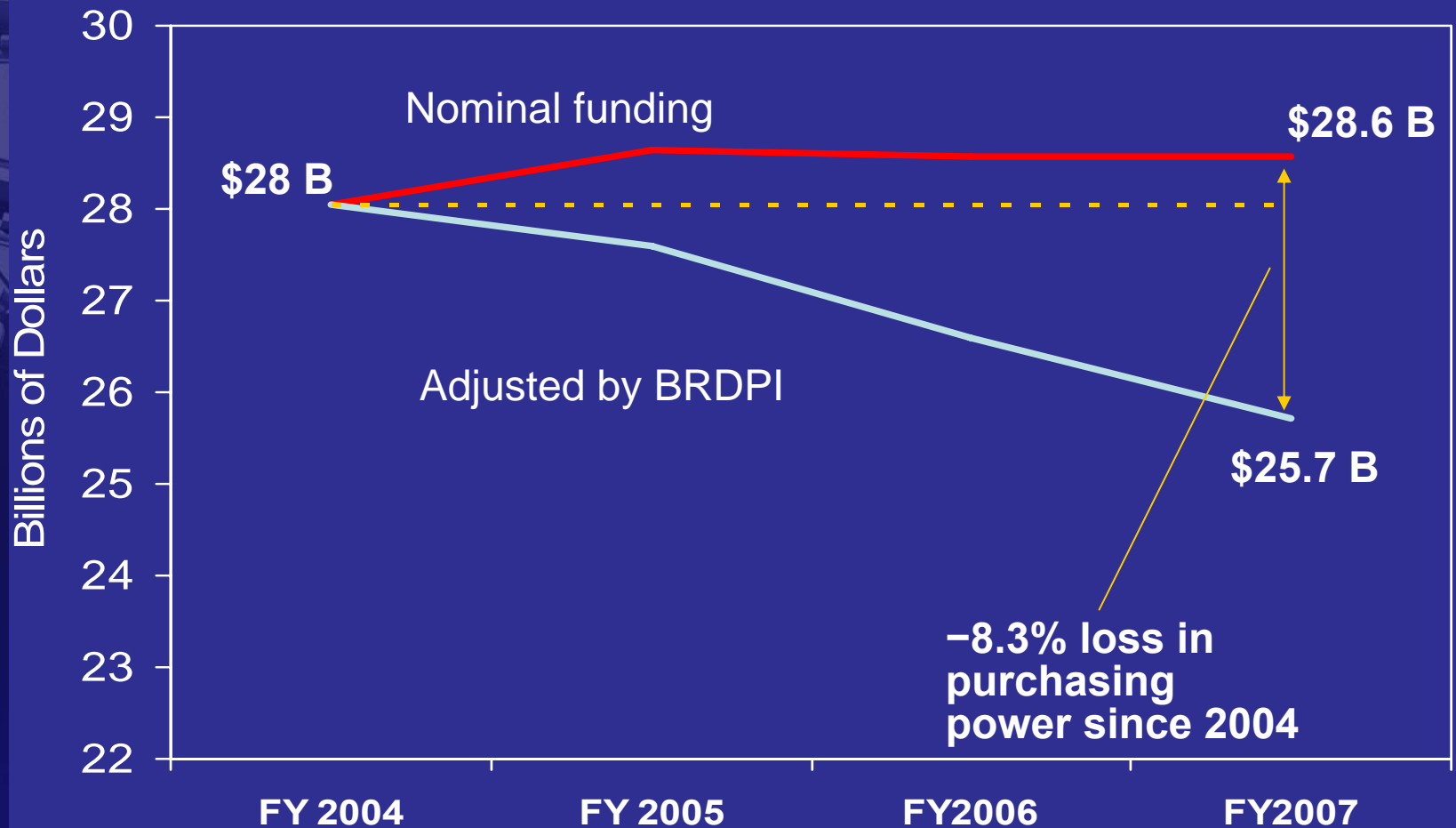


Success Rate files as of May 3, 2006. Program srf_indiv_060103_rfm
Individuals are determined using the pi_profile.person_id in IMPAC-II

September 2006



NIH's Challenge: Maintain Research Enterprise Vitality in Light of Reduced Purchasing Power and Increased Demand



Note: BRDPI is the Biomedical Research and Development Price Index

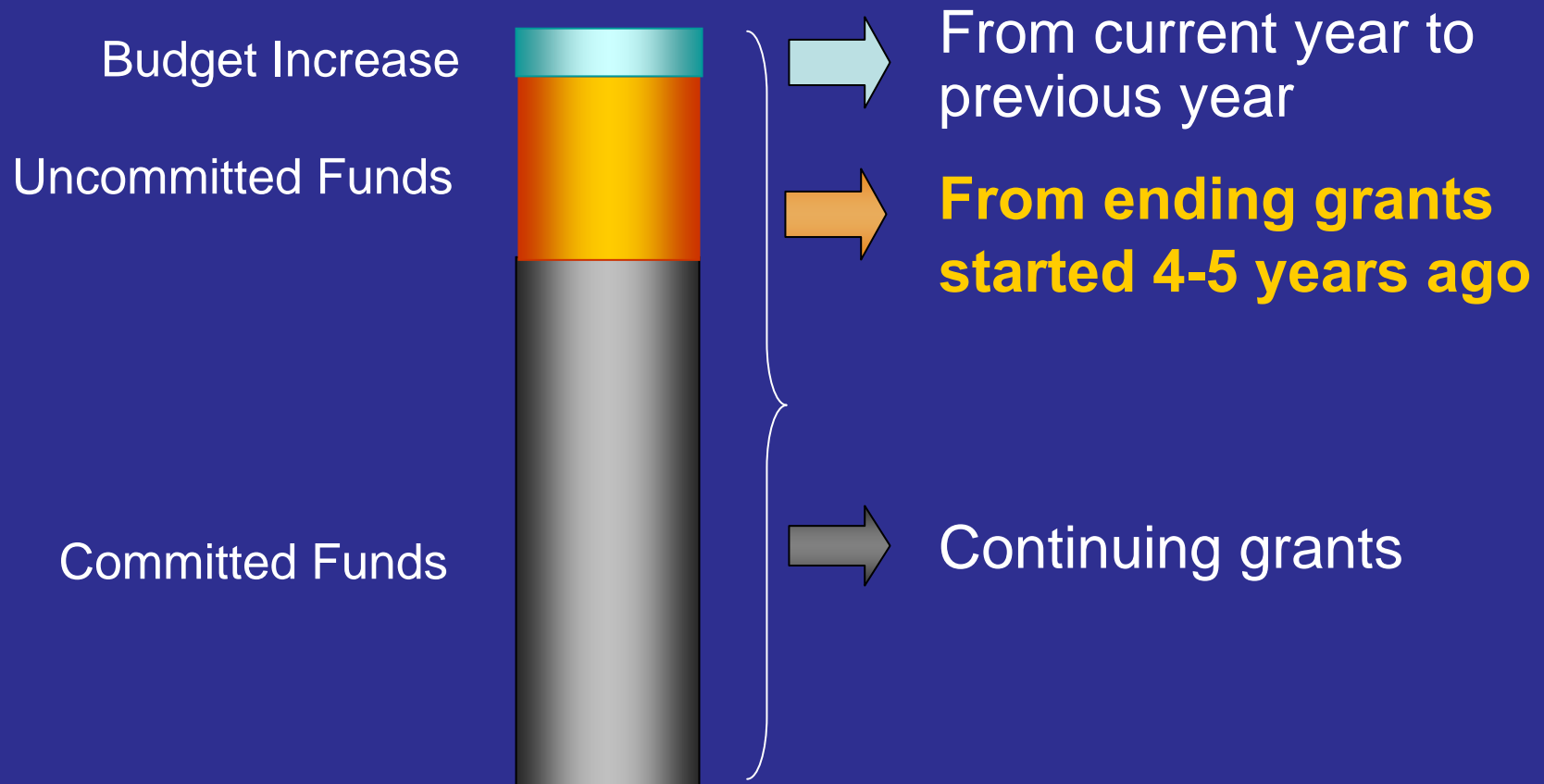
Elias A. Zerhouni, M.D.

September 2006



The Budget Cycling Phenomenon:

What Funds are Available in any One Year?



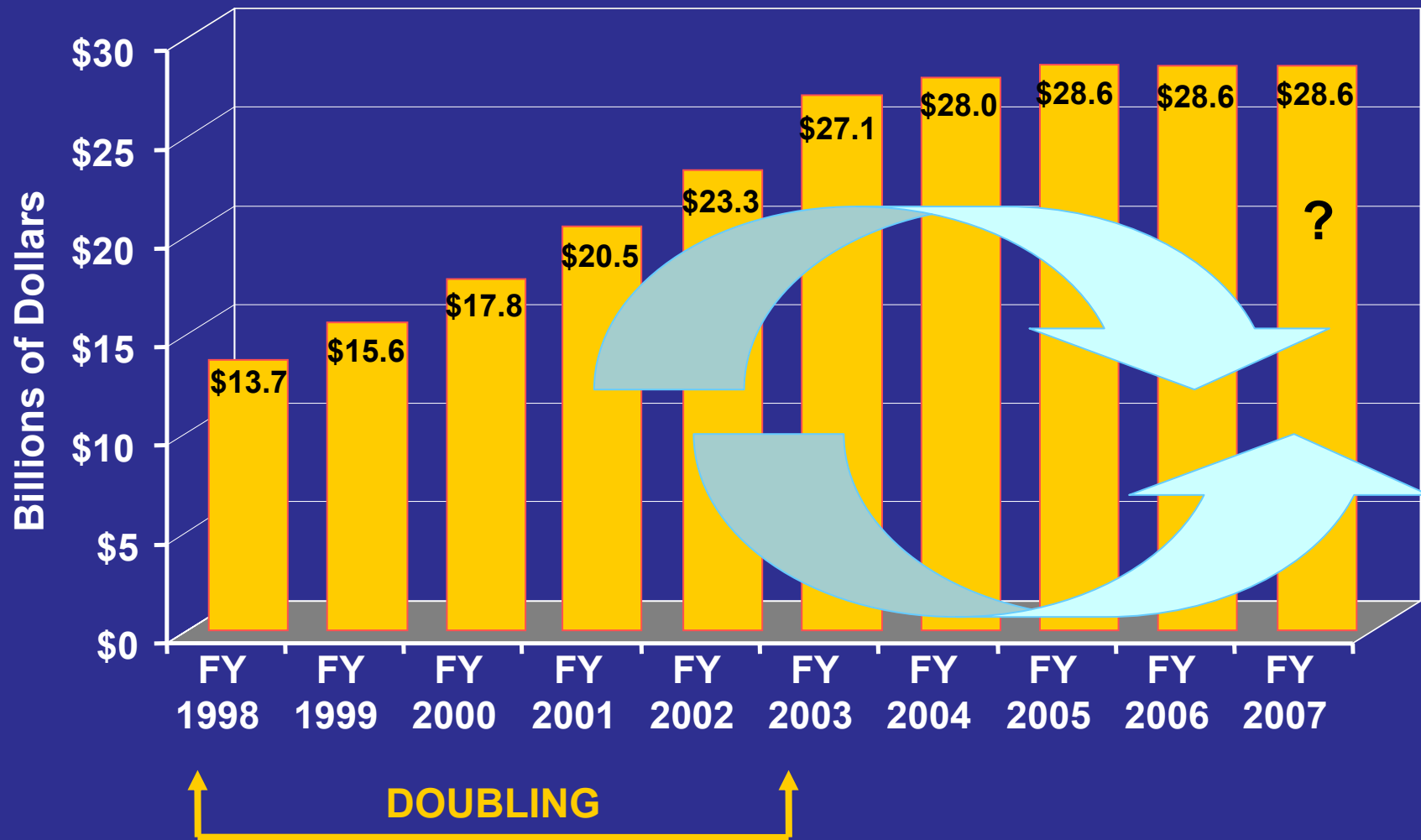
NIH Appropriations

Elias A. Zerhouni, M.D.

September 2006



NIH Congressional Appropriations



The Bottom Line:

Demand for Grants “Took Off” Just as NIH Budget Was “Landing”!

Applications



Budget



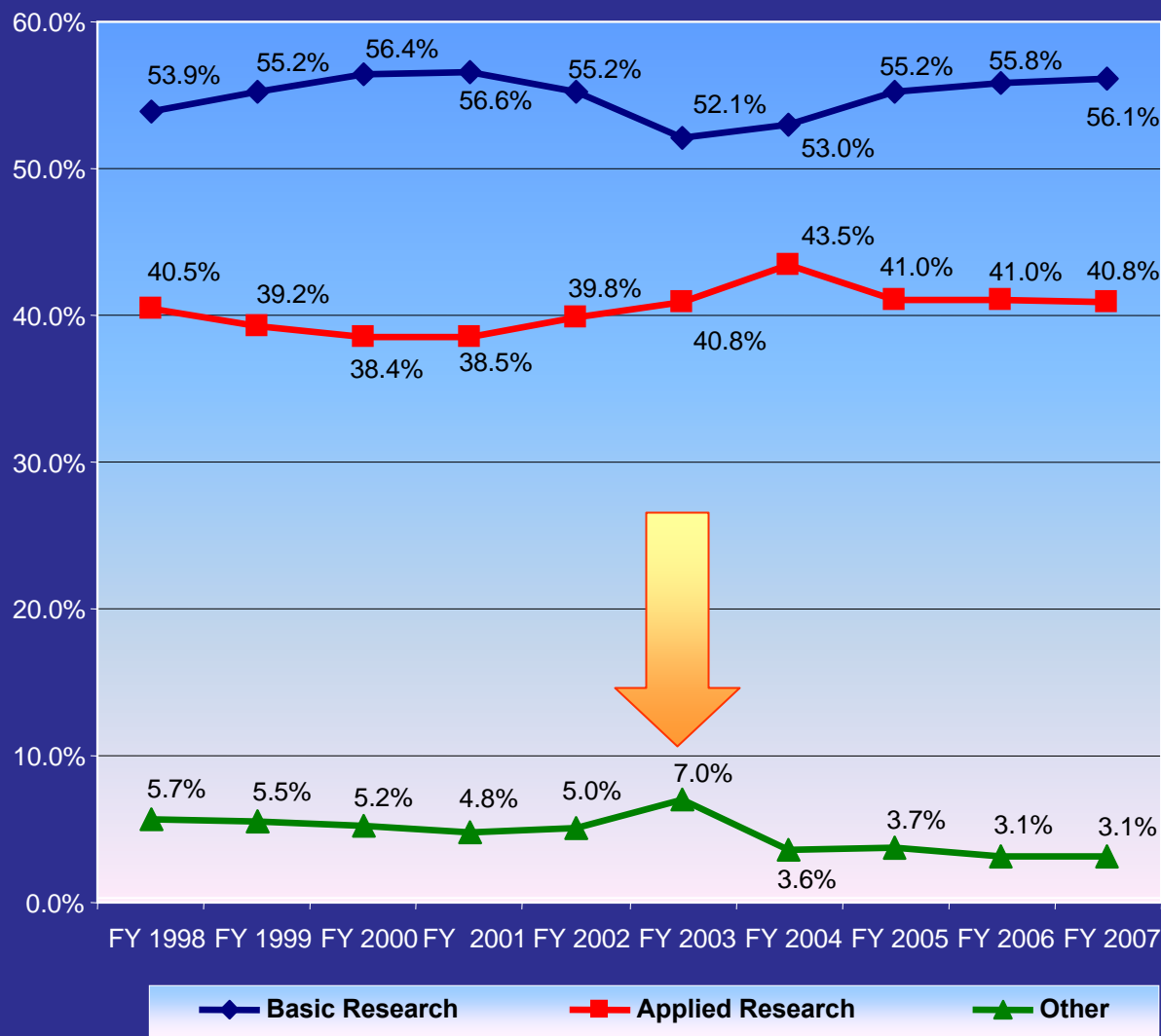
- Post doubling “boom” in applications has led to a **supply/demand imbalance**
- Success rate drop is due to
 - Near 100% increased demand for grants
 - 40% increased costs of grants
 - Decrease in inflation adjusted budget
- Budget cycling effect will slightly improve supply vs. demand of grants in 2007 and beyond



Common Misperceptions



Common Misperception 1: *NIH is Over-emphasizing Applied Research*



NIBIB Leading Roles in Roadmap/Blueprint

- Innovation in Molecular Imaging Probes
- Molecular Libraries Screening Instrumentation
- New Ways of Imaging Neural Activity
- Enabling Technologies for Tissue Engineering and Regenerative Medicine

(NIBIB was Peer Review lead for all of the above)

- National Centers for Biomedical Computing
- Nanomedicine
- New Ways to Image Neural Activity
- Clearinghouse for Neuroinformatics Tools and Databases



FY06 Roadmap and Blueprint Funding Impact on NIBIB

(Dollars in Thousands)

NIBIB Contribution	Roadmap (3,559)	Blueprint (190)
<hr/>		
NIBIB Lead		
Robotics/Instrumentation Tech. Development	1,860	
Develop High Resolution Probes for Cellular Imaging	3,600	
New Ways to Image Neural Activity		1,500
Clearinghouse for Neuroinformatics Tools and Databases		3,000
NIBIB Collaboration		
National Centers for Biomedical Computing	4,000	
TOTAL	9,460	4,500



NIBIB Special Funding Considerations

- New investigators who have scores within 5 percentile points of the NIBIB payline will be funded
- Each year, fund two or more R01 applications that have the potential to produce an unusually high impact, but while meritorious, missed the established payline due to uncertainties inherent in the research
- Special funding consideration will be given to research grant applications that bridge and integrate the life and physical sciences



Where Do We Go From Here?

Adaptive Strategies Based on Key Principles



Principle 1:

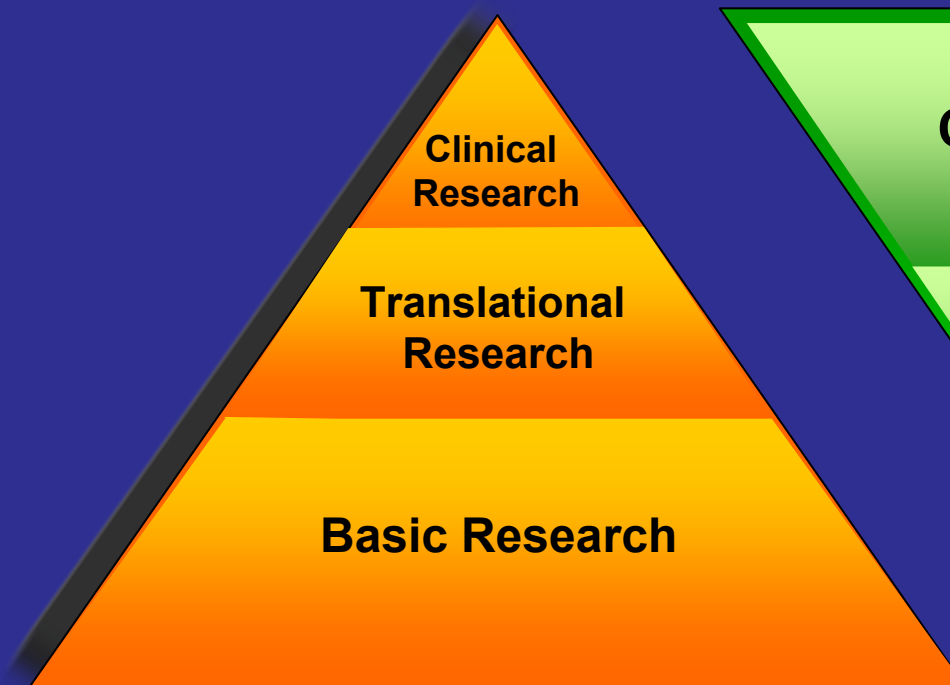
Protect Core Values and Mission



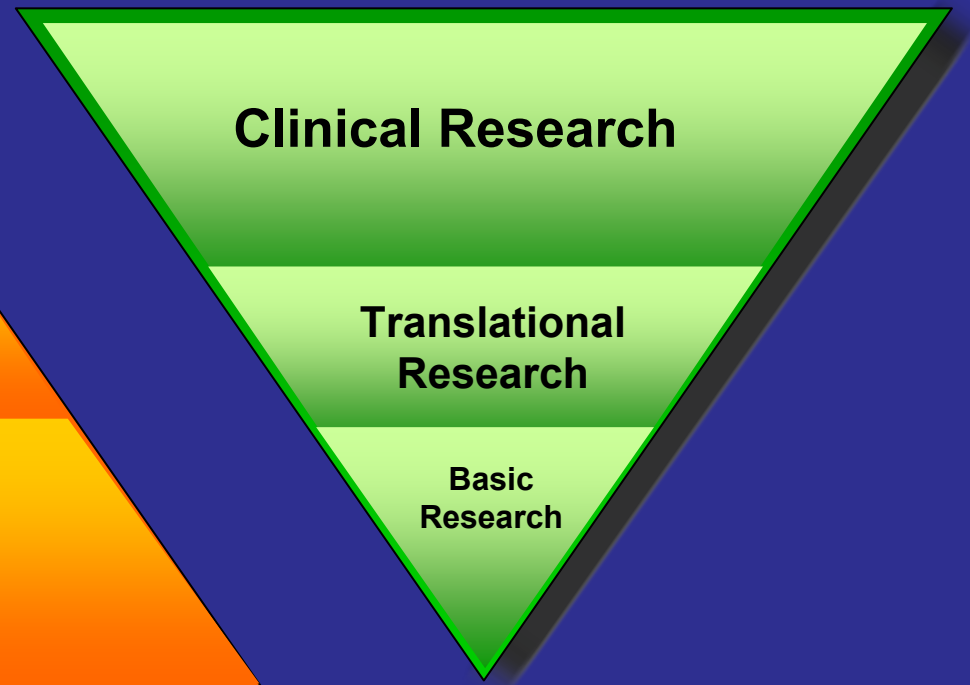
*Discovery and Generation of
New Knowledge*



Balanced National Biomedical Research Portfolio



NIH - \$28B



Private Sector - \$59B



NIH Director's Pioneer Awards



- Support individuals with untested, potentially groundbreaking ideas in many areas of science, from neuroscience to chemistry to behavioral science
- Highly competitive
 - 840 applications for 7 funded awards in 2006
 - Institutes and Centers contributed to enable funding more awards (total of 13)



Principle 2:

Protect the Future



Pathway to Independence Award

- Five years of support consisting of two phases
- Phase I provides 1-2 years of mentored support for advanced post doctoral fellows- 90k per year
- Phase II provides up to 3 years of independent RO1 equivalent research support- 250k per year
- NIH aiming for 150-200 awards per year
 - Received ~700 applications so far
 - First award announcements this Fall

http://grants1.nih.gov/grants/new_investigators/index.htm



Principle 3:

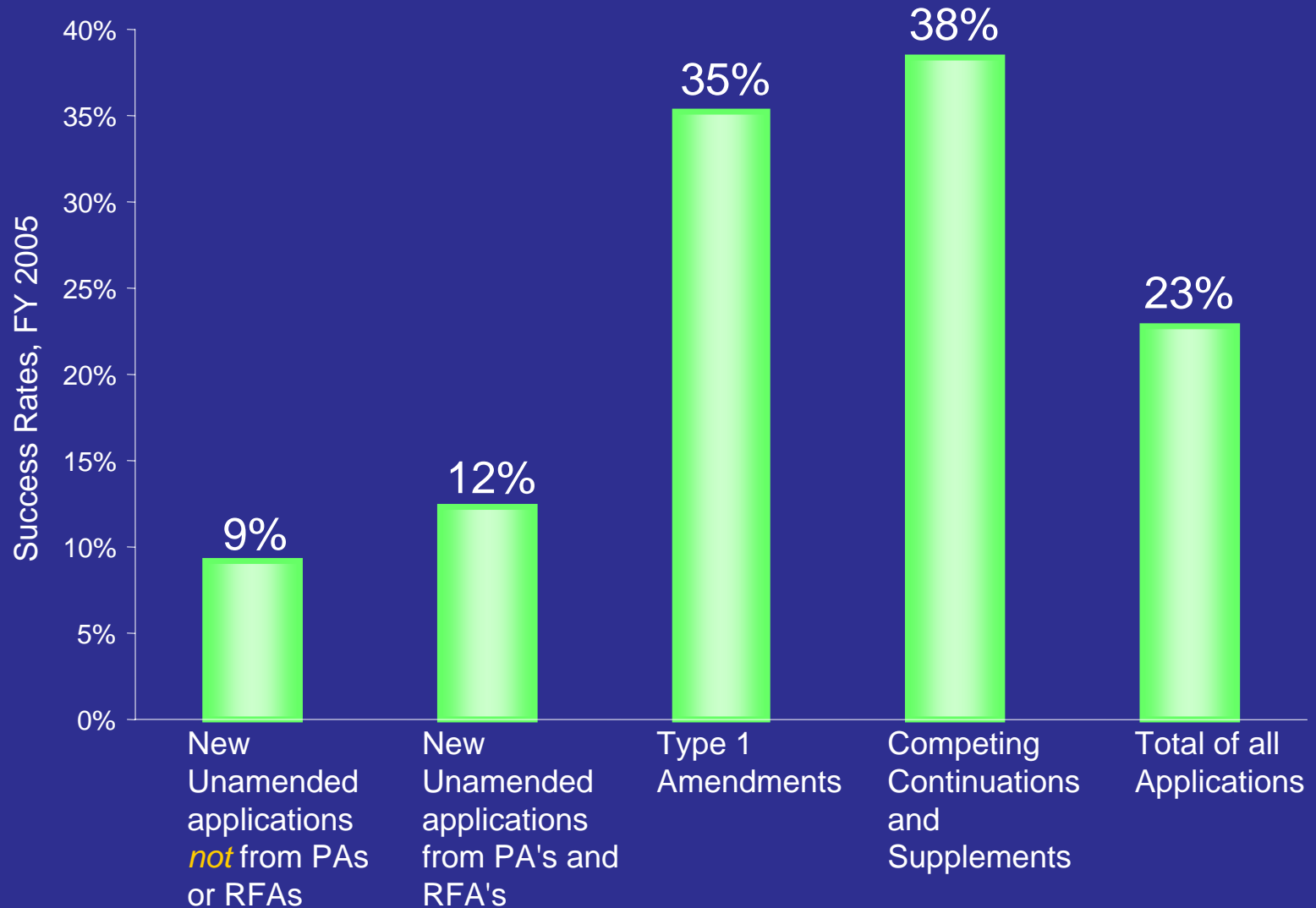
Focus on Balancing Supply/Demand

- Actively manage supply/demand imbalance by adjusting programs
- Recycle budgets into larger number of competing grants (+3% in 2007)
- Prioritize projects to maintain reasonable investigator-initiated success rates
- Maximize research and development activities by managing costs across all portfolios
- Facilitate peer-review processes to reduce need for multiple applications



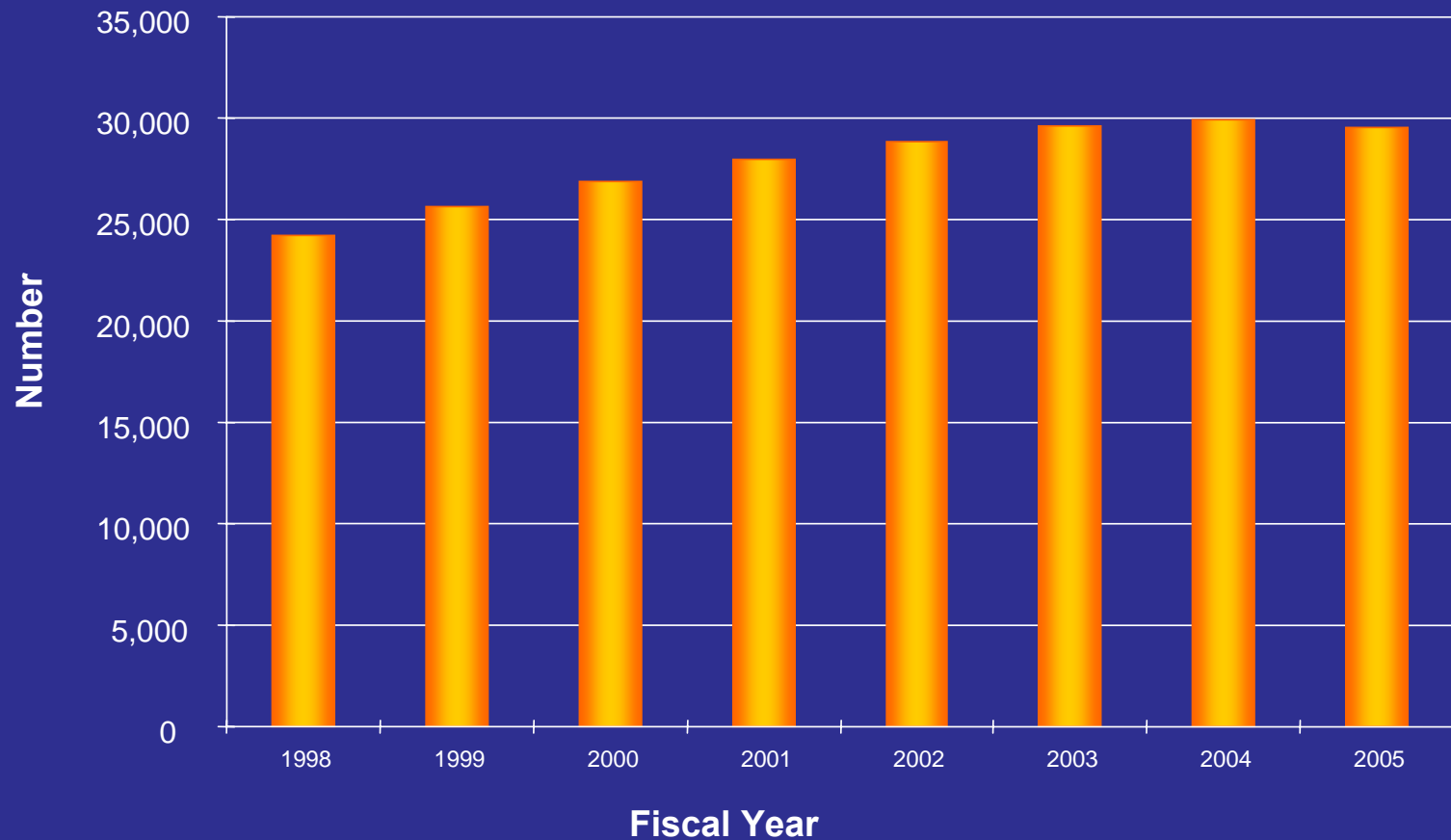
Misperceptions in the Media

Declines in Funding NIH R01 Grants



Misperceptions in the Media

Number of R01 Equivalents Decreased



R01 Equivalent* Includes R01, R23, R29 and R37

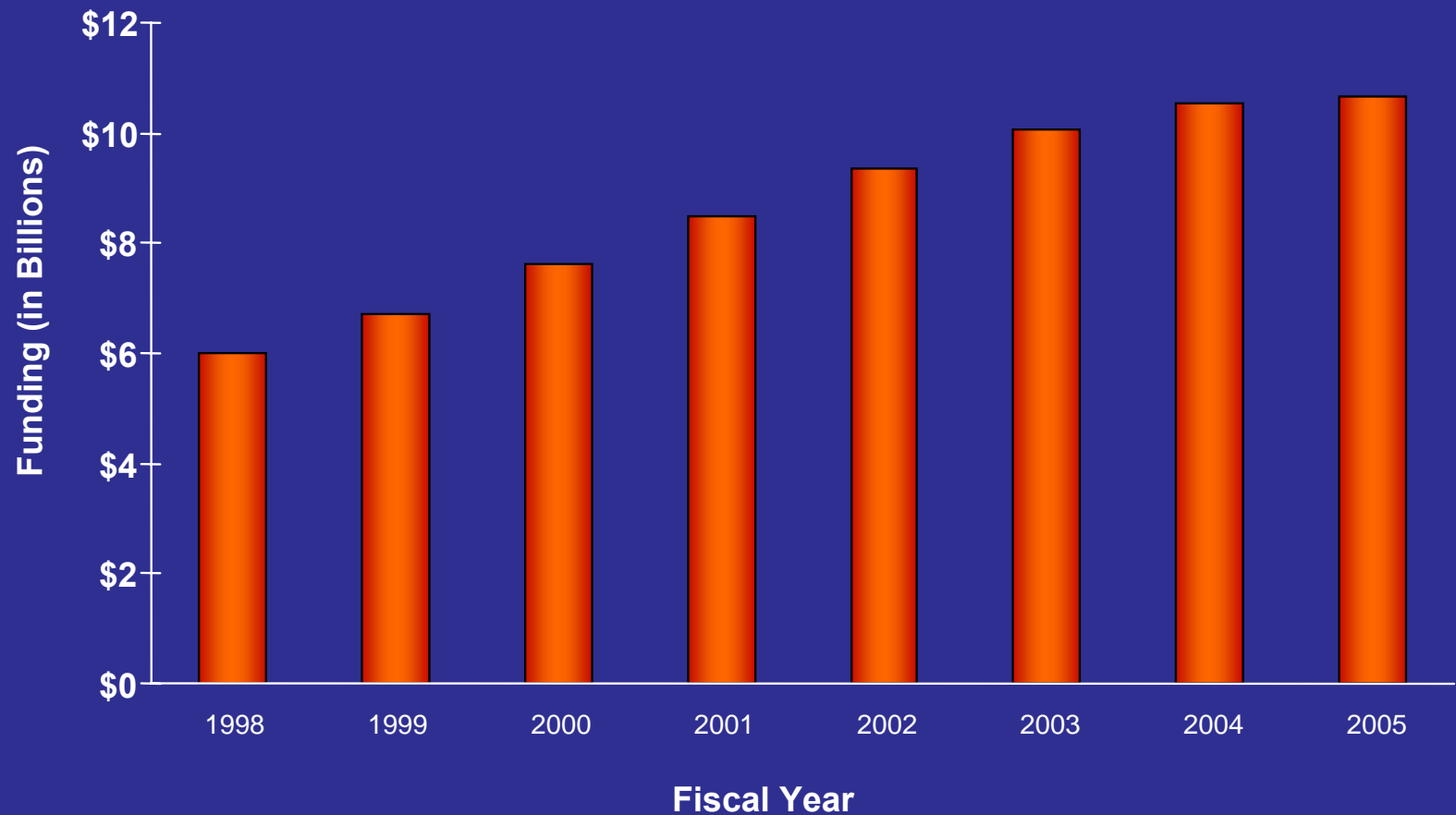
Elias A. Zerhouni, M.D.

September 2006



Misperceptions in the Media

R01 Funding Decreased

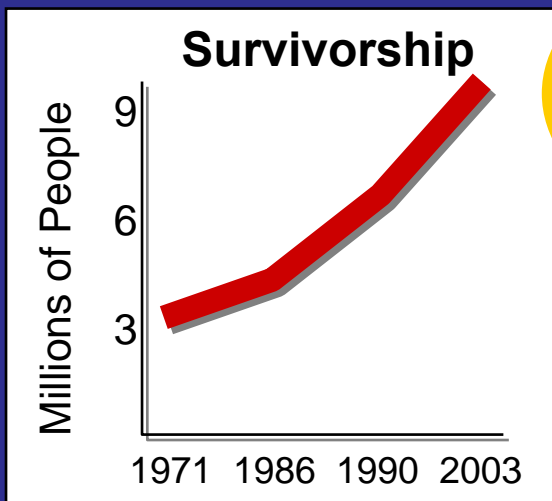
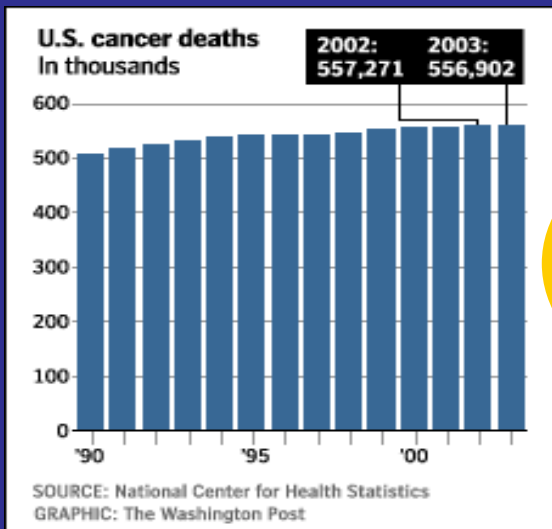


R01 Equivalent* Includes R01, R23, R29 and R37



Principle 4:

Proactive Communication about Investment in NIH



- For the first time in recorded history, annual cancer deaths in the United States have fallen
- Average investment per American ~\$8.60 per year for cancer survivors

- Improved effectiveness of early detection and screening
- With the doubling, new minimally invasive treatments for cancer multiplied

- New drugs developed for cancer prevention



NIH Communication Goals

- Increase awareness of the benefits every American receives from public investment in biomedical research
- Convey to all audiences the role research will play in transforming medicine in the 21st century
- Persuade the public and private sectors of the importance of sustaining momentum in advancing knowledge and discovery



Research Results for the Public

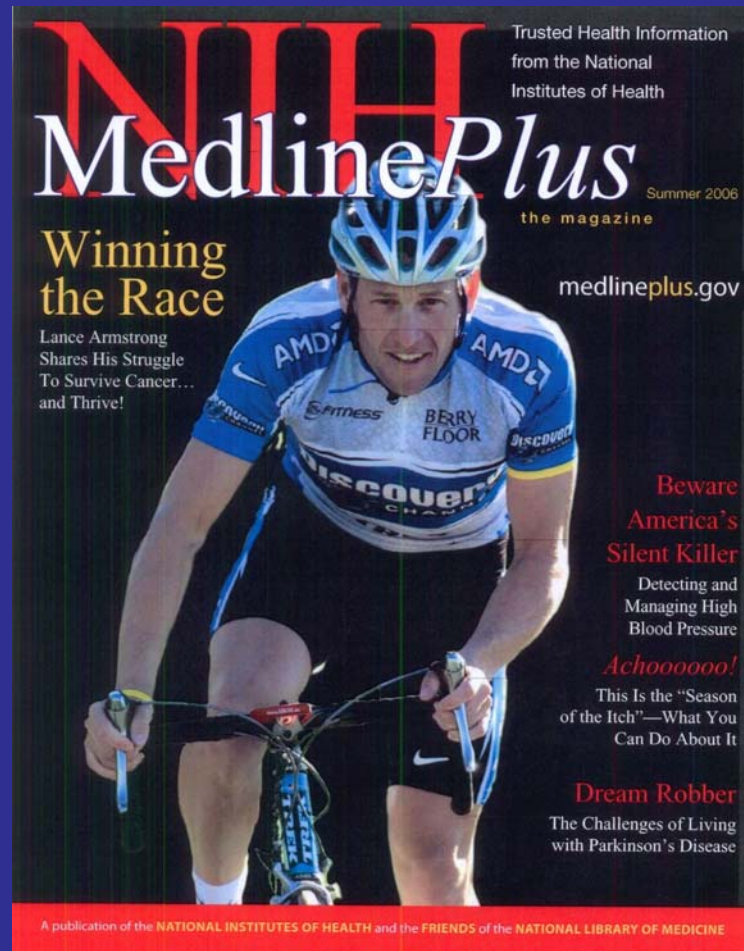


- NIH Homepage
 - More than 40 Fact Sheets
 - State-by-state Funding Data
 - Newsletter from NIH Director

<http://www.nih.gov/about/researchresultsforthepublic/index.htm>



Coming to Your Doctor's Office: Free, Authoritative, Up-to-Date Health Information



22 Million Readers, Plus Website Visitors

parade.com

Current Issue News Entertainment Health Food Ask One ment

Intelligence Report®

By Lyric Wallwork Winik
Published: July 16, 2006

E-mail story

Print story

[Sunday Freebie]

Reduce Risk of Diabetes

Some women develop a type of diabetes while pregnant. It usually goes away after giving birth, but studies show that 20% to 50% may develop type 2 diabetes within 10 years. And the child is at risk for diabetes and obesity. To reduce the odds, keep your weight down, exercise, get tested for diabetes, breastfeed and help your family to eat healthy. For a free tip sheet from the National Diabetes Education Program, visit ndep.nih.gov or call 1-800-438-5383.



[Sunday Freebie] Reduce Risk Of Diabetes

Some women develop a type of diabetes while pregnant. It usually goes away after giving birth, but studies show that 20% to 50% of them may develop type 2 diabetes within 10 years. And the child is at risk for diabetes and obesity. To reduce the odds, keep your weight down, exercise, get tested for diabetes, breastfeed and help your family to eat healthy. For a free tip sheet from the National Diabetes Education Program, visit ndep.nih.gov or call 1-800-438-5383.

PHOTO BY DANA BOWLER

ngle again, Uma Thurman asks
Tell You The T
An Interview By Jeanne Wolf

PARADE • JULY 16, 2006 • PAGE 13



Mentions “National Institutes of Health” April through August 2006

Average: 4,200 per month

(Not including specific Institute and Center programs)



NIH Beyond the Beltway

Times-Gazette at 937.393.3456 for advertising or subscription information.

to view
The Times-Gazette
online
click here

The Times-Gazette

Times-Gazette, 209 South High Street, Hillsboro, Ohio 45133 • (937) 393-3456
Established 1818 • A Division of The Brown Publishing Company

Your word search

Home

News

Local

Sports

Obituaries

Editorial

Social

Classifieds

Weather

Special Sections

Gallery of Homes

Highland County Proud

Highland County Tour

Links

Customer Service

Subscriptions

Advertising

SUBSCRIBE TODAY
Subscriber Services

Search

8/29/2006 10:41 AM

Improvin

Affordable, have work and instit Americans

Health care governm several bill

Medical ins reducing th

The Ameri five states

That has c are more a

Medical Li Help Effici support of yet. The bil insurance, patients.

Another go decreasing

ONLINE EXTRAS

Newspaper Ads Online

Past Articles

Discussion Boards

Maps & Directions

RSS Headlines

Yellow Pages

My Home Improver Blogs

Special Coverage

Special Events

Golden Herald Award

SITE SERVICES

Contact Us

Advertise

HERALDTODAY.COM
MANATEE • BRADENTON • SARASOTA

MEMBER CENTER: Create Account | Log In

3 WCAX-TV NEWS
Vermont's Own

Home WCAX.com

Local News

Weather

Sports

HealthWatch

Business

Local Guide

Jobs

Entertainment

Contests & Events

TV Listings

ConsumerWatch

Contact Us

Classifieds

Lifestyle

UAMS, Vermont launch plans

Local News More >>

Democrats Debate

Lengthy Labor Day Parade

Hot Topic

Girl Kidnapped From Backyard

Dog Team Tavern Memories

Teens Arrested for Vandalism Spree

Median Income Up in Chittenden County

Vermont State Fair Opens

Antique Planes Take to the Sky

Researchers here and at the other two National Institutes of Health

Each wave of participants

One group will become part of the third group will be served

Copyright 2006 Associated Press. Not published, broadcast

Sometimes preparing for college takes more than good grades.

courier-journal.com
The Courier-Journal Louisville, Kentucky

Customer Service: Subscribe Now

• courier-journal.com • Weather • Jobs • Cars • Real Estate • Apartments • Shopping • Classifieds • Dating

ING

• 3-TAB • SHAKE • METAL

5 DAYS ONLY

10 FINAN LOW NO MK

GrandForksHerald.com

Search Recent News Archives Web for Go

News **DEVELOP**

Posted on Sat, Aug. 19, 2006

No bones about it

Biochemistry professor scores grants to study calcium in cells

By Joseph Marks
Herald Staff Writer

Everyone knows it's good for your bones. But it turns out that calcium, just the right amount of it, is also necessary for your cells to function properly.

Too much calcium in cells can lead to diseases such as cancer, UND Assistant Professor Brij Singh said. Too little calcium can lead to cell death, which is associated with degenerative diseases such as Alzheimer's and Parkinson's disease.

Singh, who does research and teaches in the School of Medicine and Health Sciences' biochemistry department, recently scored more than \$1.6 million in grant money from the National Institutes of Health and the National Science Foundation to study the special protein that transmits calcium into cells.

How it works

During the five years of the NIH grant, Singh said, he hopes to determine exactly how the calcium-transmitting protein works. If the grant is renewed, he said, he hopes to study how to regulate the number of proteins and the amount of calcium transmitted, which could lead to new treatments for some diseases.

Receiving grants from both the NIH and NSF is rare because the former tends to focus

ONLINE EXTRAS

Breaking News

Legislature

Local

Nation

Obituaries

Photos

State

Weird News

World

Sports

Entertainment

Business

Living

Opinion / Letters

Past Articles

Discussion Boards

Maps & Directions

Newspaper Ads

RSS Headlines

Yellow Pages

SITE SERVICES

Advertise

Contact Us

Related News from

Latest headlines by topic:

- Biotech
- HIV/AIDS
- Prostate Cancer
- Medicine
- African-American
- Health
- Healthcare Industry

Powered by Topix.net

Health

Health affairs at the University of Louisville will apply for a grant next month to study the effect of calcium and its role in human health and disease.

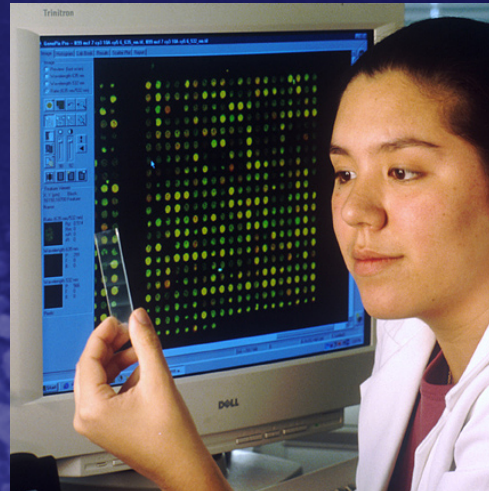
Reference following a day of officials and educators. Dr. John Ruffin, who attended the briefings and whose office arranged the news conference at the Metro Health Department's Center for Health Equity.

Cook said U of L and other institutions in Louisville already are treating and doing research on diseases that tend to affect African Americans, said Ellen de



Principle 5:

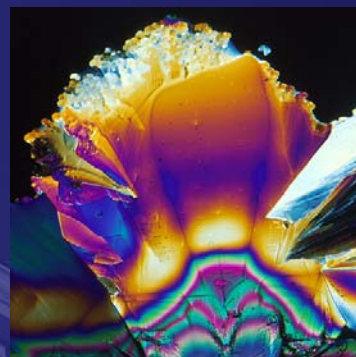
Promote NIH's Vision for the Future



Predictive ↔ Personalized ↔ Preemptive



Participatory



NIH *Transforming medicine and health through discovery*

